UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,665	04/03/2001	Robert Huber	00 P 7778 US 01	3637

7590 08/05/2004	**EXAMINER**
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ART UNIT	PAPER NUMBER
2125·	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/824,665	HUBER ET AL.
	Examiner	Art Unit	
	Kidest Bahta	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *10 May 2004*.
2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-4, 7, 12-20, 22-23 and 28-29* is/are pending in the application.
  4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-4, 7, 12-20, 22, 23, 28 and 29* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  a)☐ All b)☐ Some * c)☐ None of:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. _____.
    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-4, 7, 12-20, 22-23, 28-29 are rejected under 35 U.S.C. 102(e) as being

anticipated by Hopkins et al. (U. S. Patent 6,507,765).

Regarding claims 1-2, Hopkins discloses a system for assisting operators in

electronics manufacturing plant, the system comprising: processor (Fig. 7, element

290); a data storage device coupled to the processor (Fig. 7, element 294); a handheld

device (42) including a display coupled to the processor (function of the task data

(column 6, lines 36-46, i.e., handheld device allow complete tractability of the

manufacturing process such that each part installed on a given PCB can be traced in

traced in terms of a particular machine, reel, device location, time, date, machine

operator... It is inherent to have a processor and display to process and show all data

listed above, Fig. 7, element 296); monitoring (432, i.e., CIMCIS Archive) software

stored in the data storage device (Fig. 16, elements 422, 424, 426, ...430) and adapted

for being run on the processor (Fig. 16, elements 70 and 54; column 12, lines 16-41), at

least one of a circuit panel magazine feeder monitoring device (Fig. 6, 256 and 274, i.e.,

the error/defect monitoring function 256 calculates and displays the top errors for each

of the error groups of feeder 274, nozzle and type 278.), a screen printer monitoring

device a component placement machine monitoring device an oven monitoring device

(Fig. 1, i.e., Each of the processing machines 16, 20 and 24 is typically control by a

specialized and dedicated host computer, such as host computer 18, 22 and 26,

respectively. It is inherent the host computer used for monitoring purpose too.), and a

magazine (feeder) storage monitor device (Fig. 6, element 282, i.e., feeder

management 282 ... includes extended non-host commands and basic host commands

288.).

Regarding claims 3, Hopkins discloses the component placement machine

monitoring device includes a splice detection subsystem and component closed loop

validation subsystem (column 4, lines 14-30, i.e., a processing of manufacturing data for

providing real-time data analysis and feedback local to each manufacturing machine

(Fig. 1, elements 16, 20, 24) and for providing closed-loop control of the manufacturing

process. ...Provide complete, real-time tracking inventory).

Regarding claims 4 and 14, Hopkins discloses a network (Fig. 1, element 50)

connecting the processor and the at least one monitoring device (Fig. 15).

Regarding claims 7,15-17, 22-23 and 29, Hopkins discloses that the handheld

device includes a barcode scanner (column 6, lines 39-40); and display and processor

are part of a handheld device (Fig. 1, element 42) and it display information as a

function of the task data (column 6, lines 36-46, i.e., handheld device allow complete

tractability of the manufacturing process such that each part installed on a given PCB

can be traced in traced in terms of a particular machine, reel, device location, time,

date, machine operator... It is inherent to have a processor and display to process and

show all data listed above).

Regarding claims 12 and 18, Hopkins discloses a screen printer (16) having a

screen printer monitoring device (18) for sensing a solder level at the screen printer

(column 4, lines 30-38, 52-58 and column 5, lines 21-30; i.e.; each of the processing

machines 16, 20 and 24 is typically controlled by a specialized and dedicated hast

computer... the machine 16, a selected program for controlling the machine to deposit

the selected pattern of solder (a solder level) on the PCB); at least one component

placement machine (20) having a feed tape and placement monitor (22) for monitoring

at least one of the existence of a feed tape splice and the number of the component on

the feed tape (column 4, 38-40; column 9, lines 8-15) and a processor (Fig. 1, element

36) receiving data from the screen printer monitoring device (Fig. 1, element 18) and

placement monitor (Fig. 1, element 22; Fig. 1 and Fig. 16; column 6, lines 45-53;

column 13, lines 41-49; i.e., Rather than one central processor, the CIMCIS terminal

36, line controller 54, workstation 56, and factory server 64 distribute the processing to

enhance data analysis and allow real time feedback of relevant data without interfacing

with the operation of the machine host computer).

Regarding claim 13, Hopkins discloses conveyer (Fig. 1, element 12) located at

least between the screen printer and at least one component placement machine for

transporting circuit boards (Fig. 1; column 4, lines 31-35).

Regarding claims 19-20, Hopkins discloses screen printing (16) a printed circuit

board with a screen print (column 4, lines 52-58); placing at least one component on the

printed circuit board using a placement machine (Fig. 1, element 20; column 4, lines 38-40); monitoring at least one of the screen printer and the placement machine (Fig. 1); so as to generate task data related to necessary operation maintenance tasks (column 5, lines 46-50; column 6, lines 1-16; column 7, lines 4-10; column 8, lines 59-60; Fig. 6;) and display the data to the operator (column 6, line 38-column 7, lines 38, Fig 2-Fig. 4, Fig. 6 and Fig. 17); organizing data the data as a function of time (column 7, lines 29-39, column 8, lines 54-66).

Regarding claims 28, Hopkins discloses a processor (36) operatively connected to receive data from at least one of a screed printer (16) and a component placement (20) machine (Fig. 1; column 16, lines 41-49, i.e., A third method of connecting the CIMCIS terminal 36 to a processing machine 16 is used where the processing machine operated in stand alone mode but also has the capability of communication with host computer 18, it is inherent that the some method applied to a processing machine 20); display (296) connected to the processor (290) displaying task data related to the screed printer and the component placement (column 6, line 38-column 7, lines 38, Fig. 2-Fig. 4, Fig. 6 and Fig. 17).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 21, 25-27 ad 30-31are rejected under 35 U.S.C. 103(a) as being

unpatentable over Hopkins et al. (U. S. Patent 6,507,765).

Regarding claim 25 and 30-31, Hopkins discloses that monitoring the screen

printer (16) and the placement machine (18) so as to generate electronic task data

(column 3, lines 11-30; column 5, lines 21-35; column 6, line 38-column 7, lines 38, Fig

2-Fig. 4, Fig. 6 and Fig. 17); monitoring an assembly line to schedule maintenance

(column 6, line 54- column 7, line 18; Fig. 2 and Fig. 3; column 8; line 54- column 9,

lines 7); determining a first and a second task time as a function of the input data and

displaying both the first and second task time (column 7, lines 11-39; Fig. 2-Fig. 4, task

is the same as states); organizing and displaying the task data so as to form a list of

tasks relating to maintenance of the assembly line (column 6, lines 1-15; column 7, lines

29-39; column 8, lines 54-66; Fig. 6 and Fig. 17).

Hopkins fails specifically disclose monitoring or receiving data from more than

one screen printer and placement machine. However, it would have been obvious to

person of ordinary skill in the art at the time of invention to add a plurality of processing

machines for each steps (screen printer and placement machine) to be monitored by

the host machine of Hopkins since a manufacturing system or production line generates

a product in a mass, when more than one processing machine in each steps would

make the product faster and therefore with less cost.

Regarding claims 26 and 27, Hopkins discloses monitoring the assembly line, for

malfunctions and displaying malfunction data together with the list of tasks (column 6,

lines 40-43; column 12, lines 16-41; Fig. 6); malfunction data includes data indicating at

least one of a fiducially misreading, an assembly line conveyor stop, and a failed splice

(column 6, line 58 - column 7, line 10, column9, lines 8-15 and Fig. 3)

Regarding claim 21, Hopkins discloses the limitation of claim 19 as stated above

in Par. 4. Hopkins fails specifically disclose monitoring more than one placement

machine. However, it would have been obvious to person of ordinary skill in the art at

the time of invention to add a plurality of processing machines for each steps (screen

printer and placement machine) to be monitored by the host machine of Hopkins since a

manufacturing system or production line generates a product in a mass, when more

than one processing machine in each steps would make the product faster and

therefore with less cost.

Response to Arguments

5.   Applicant's arguments filed 5/10/2004 have been fully considered but they are

not persuasive.

Regarding claims 1and 28, applicant argues that Hopkins handheld device (42)

does not describe as including a display coupled to a processor. However, examiner

disagree that since a processor (CIMCIS terminal 36) including ... a handheld scanner

42 (column 3, lines 59-67; Fig. 1) and a processor including a display (column 7, lines 4-

10 and column 7, lines 17-36; column 8, lines 4-5; i.e., the CIMCIS terminal 36,

including the display...). In addition, applicant argues Hopkins handheld device is use

only for inputting parts information into the system and not as a device for providing

information to operator. However, the examiner disagree because the claim 1 does not

required that the handheld device has to be for inputting information or providing information.

Note: Hopkins discloses that the handheld device 42 allow complete traceability of the manufacturing process such that each part installed on a given PCB can be traced in terms of a particular machine ...and operating condition of the processing machine (column 6, lines 38-45). This shows that Hopkins handheld device is not only for inputting parts information.

Regarding claim 12, Applicant argues that Hopkins fails to give a description of a sensor for sensing a solder level at the screen printer. However, Examiner disagrees because Hopkins discloses the sensor (30) sensing the parameters of the processing machine (a screening machine (16), a pick and place machine (20) and solder reflow machine (24)). The sensor 30 which connecting with solder reflow machine (Fig. 1) and the sensor send the messages or parameters, back to the host computer (26) (monitoring device), regarding the performance of the screening procedure (column 2, line 63-column 3, line 30; column 4, lines 46-58). Please note that the word parameters includes the complete performance of the screen-printing and solder procedure on the particular board, which one of the parameter is solder level.

Regarding claim 19, applicant argues that Hopkins differs from claim 19 in that the data generated and presented to the operator is related to status and performance of the machine and not task data relating to necessary operator maintenance tasks.

However, examiner disagrees since Hopkins discloses that in Fig. 5, Fig. 6, column 5, lines 46-50; column 6, lines 1-16; column 7, lines 40-67; column 9, lines 9-15;

i.e., functionality module (task data) include a maintenance module 230.the summary screen function 252 includes... maintainability. And the terminal can be programmed to inform the operator of the corrective action required. The error/defect control function includes maintenance management 284).

Regarding claim 25, applicant argues that Hopkins fails to discloses generation of task data, list of tasks relating to maintenance of the assembly line and displaying list of tasks.

However, examiner disagrees since the limitations "generation the task data" is not in the claim, instead the claim has such limitation "organizing the task data", Hopkins discloses organizing the task data (Fig. 2 and Fig. 3; i.e., equipment stats, IDLE, waiting to receive product from prior machine, which this is one of the machine state or task), list of tasks relating to maintenance of the assembly line (column 7, lines 5-10; the terminal can be programmed to inform the operator of the corrective action required; and to confirm, via eavesdropping that such corrective action has actually occurred); and displaying list of tasks (column 7, lines 16, i.e., the machine states (tasks) are included in a summary screen presented on an LCD display of the CIMCIS 36).

Regarding claims 30 and 31, applicant argues that Hopkins fails to disclose "a method for scheduling tasks" and "monitoring an assembly line to schedule maintenance". In addition, applicant argues that Hopkins fails to disclose determining a time requires performing a task.

However, examiner disagrees since Hopkins discloses scheduling tasks (Fig. 2

and Fig. 3; column 8, line 66-column 9, line 2; i.e.; ...equipment availability 268 (RUN,

WAIT, IDLE, DOWN) equipment dependent uptime, supplier dependent uptime,

operation uptime, utilizing the SEMI E10-96 Reliability metrics, such as RUN, Wait, Idle

and Down time. Please note RUN, WAIT, IDLE, and DOWM are the specific tasks and

uptime indicated the work has been done by according to schedule). Further, Hopkins

discloses monitoring an assembly line to schedule maintenance (Fig. 6, element 284,

maintenance management; column 7, lines 60-65; column 8, lines 55-66; column 11,

lines 13-19; i.e., a maintenance module 230 and machine controller 232, which allows

selection of performance criteria of the processing machine 16 which, when not met,

may trigger the alarm and/or cause operation of the machine 16 to cease). Further

more, Hopkins discloses determining a time required performing a task (column 8, lines

54-66; Fig. 6, element 252; i.e., ...Cycle Time).

Conclusion

6.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7.   Any inquiry concerning communication or earlier communication from the examiner should be directed to Kidest Bahta, whose telephone number is (703) 308-6103. The examiner can normally be reached on M-F from 7:30 a.m. to 4:00 p.m. If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached (703) 308-0538. Additionally, the fax phone for Art Unit 2125 is (703) 308-6306 or 308-6296. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.

Kidest Bahta
July 29, 2003